

AMENDMENTS

In the Claims

1 1.(**previously presented**) A composition comprising a nano-particle core and a nano-structure
2 formed an outer surface of the core, where the nano-particle core comprises a first conductive
3 material and the structure comprises a second conductive material, where the first and second
4 conductive materials are the same or different.

2.(**canceled**)

3.(**canceled**)

4.(**canceled**)

5.(**canceled**)

6.(**canceled**)

7.(**canceled**)

8.(**canceled**)

9.(**canceled**)

10.(**canceled**)

1 11.(**currently amended**) A ~~nano-structure~~ composition comprising a nano-particle core and a
2 plurality of nano-rods, where the nano-particle core comprises a first material and the nano-rods
3 comprises a first conductive material.

1 12.(**currently amended**) The composition of claim 11, further comprising a nano-shell
2 interposed between the core and the nano-rods, where the nano-shell comprises a second
3 conductive material, where the first and second conductive materials are the same or different.

13.(**canceled**)

14.(**canceled**)

15.(**canceled**)

16.(**canceled**)

17.(**canceled**)

18.(**canceled**)

19.(**canceled**)

20.(**canceled**)

21.(**canceled**)

22.(**canceled**)

23.(**canceled**)

24.(**canceled**)

25.(**canceled**)

26.(canceled)
27.(canceled)
28.(canceled)
29.(canceled)
30.(canceled)

1 31.(previously presented) The composition of claim 1, wherein the nano-structure is selected
2 from the group consisting of a nano-shell, a plurality of nano-rods and a nano-shell having a plurality
3 of nano-rods disposed on a surface of the nano-shell, where the nano-rods comprise a third
4 conductive material, where the first, second and third conductive materials are the same or different.

1 32.(previously presented) The composition of claim 1, wherein the first conductive material
2 comprises a first metal, metal alloy or a conductive polymer and the second conductive material
3 comprises a second metal or metal alloy.

1 33.(previously presented) The composition of claim 31, wherein the first conductive material
2 comprises a first metal, metal alloy or a conductive polymer, the second conductive material
3 comprises a second metal or metal alloy, and the third conductive material comprises third metal or
4 metal alloy, where the first, second and third metals and/or metal alloys are the same or different.

1 34.(previously presented) The composition of claim 32, wherein the first, second and third
2 metals or metal alloys are the same or different noble metals or metal alloys, where the noble metal
3 are selected from the group consisting of gold, silver, platinum, palladium, iridium, osmium,
4 ruthenium, rhodium, and mixtures or combinations thereof.

1 35.(previously presented) The composition of claim 33, wherein the first, second and third
2 metals or metal alloys are the same or different noble metals or metal alloys, where the noble metal
3 are selected from the group consisting of gold, silver, platinum, palladium, iridium, osmium,
4 ruthenium, rhodium, and mixtures or combinations thereof.

1 36.(previously presented) The composition of 1, wherein the first metal and first metal alloy are
2 selected respectively from the group consisting of non-transition metals, non-transition metal alloys,

3 transition metals, transition metal alloys, lanthanide metals, lanthanide metal alloys, actinide metals,
4 and actinide metal alloys.

1 **37.(previously presented)** The composition of 31, wherein the first metal and first metal alloy
2 are selected respectively from the group consisting of non-transition metals, non-transition metal
3 alloys, transition metals, transition metal alloys, lanthanide metals, lanthanide metal alloys, actinide
4 metals, and actinide metal alloys.

1 **38.(previously presented)** The composition of 1, wherein the nano-structure has a plasmon
2 resonance having a frequency range at least a portion of which lies in the near infrared region of the
3 electromagnetic spectrum.

1 **39.(previously presented)** The composition of 31, wherein the nano-structure has a plasmon
2 resonance having a frequency range at least a portion of which lies in the near infrared region of the
3 electromagnetic spectrum.

1 **40.(currently amended)** A ~~nano-structure~~ composition comprising a nano-particle core, a nano-
2 structure formed an outer surface of the core and a bio-compatible polymer coating the structure and
3 the core, where the nano-structure is selected from the group consisting of a nano-shell, a plurality
4 of nano-rods and a nano-shell having a plurality of nano-rods disposed on a surface of the nano-shell,
5 where the nano-particle core comprises a first material, the nano-shell comprises a second conductive
6 material, and the nano-rods comprise a third conductive material, where the second and third
7 conductive materials are the same or different.

1 **41.(previously presented)** The composition of claim 40, wherein the first material is a non-
2 conductive material, a semi-conductor material or a conductive material.

1 **42.(previously presented)** The composition of claim 41, wherein the first conductive material
2 comprises a first metal, metal alloy or a conductive polymer, the second conductive material
3 comprises a second metal or metal alloy, and the third conductive material comprises third metal or

4 metal alloy, where the first, second and third metals and/or metal alloys are the same or different.

1 43.(previously presented) The composition of claim 42, wherein the first, second and third
2 metals or metal alloys are the same or different noble metals or metal alloys, where the noble metal
3 are selected from the group consisting of gold, silver, platinum, palladium, iridium, osmium,
4 ruthenium, rhodium, and mixtures or combinations thereof.

1 44.(previously presented) The composition of 41, wherein the first metal and first metal alloy
2 are selected respectively from the group consisting of non-transition metals, non-transition metal
3 alloys, transition metals, transition metal alloys, lanthanide metals, lanthanide metal alloys, actinide
4 metals, and actinide metal alloys.

1 45.(previously presented) The composition of claim 40, wherein the nano-structure has a
2 plasmon resonance having a frequency range at least a portion of which lies in the near infrared
3 region of the electromagnetic spectrum.

1 46.(previously presented) A nano-structure drug-delivery composition comprising a nano-particle
2 core, a nano-structure, a bio-compatible polymer coating and a pharmaceutically active agent
3 impregnated into the polymer coating, where the nano-structure is selected from the group consisting
4 of a nano-shell, a plurality of nano-rods and a nano-shell having a plurality of nano-rods disposed
5 on a surface of the nano-shell, where the nano-particle core comprises a first material, the nano-shell
6 comprises a second conductive material, and the nano-rods comprise a third conductive material,
7 where the second and third conductive materials are the same or different.

1 47.(previously presented) A nano-structure drug-delivery composition comprising a nano-particle
2 core, a nano-structure formed on an outer surface of the core, and a pharmaceutically active agent
3 absorbed or attached thereto, where the nano-structure is selected from the group consisting of a
4 nano-shell, a plurality of nano-rods and a nano-shell having a plurality of nano-rods disposed on a
5 surface of the nano-shell, where the nano-particle core comprises a first material, the nano-shell
6 comprises a second conductive material, and the nano-rods comprise a third conductive material,

7 where the second and third conductive materials are the same or different.

1 48.(previously presented) A method for treating cancers or diseases comprising:
2 administering a composition to an animal including a human and
3 exposing the composition to an electromagnetic, magnetic, electrical and/or ultrasonic field
4 so that the nano-structures convert the field into thermal energy,
5 where the composition comprises a nano-particle core, a nano-structure formed an outer
6 surface of the core and a bio-compatible polymer coating the structure and the core or a
7 pharmaceutically active agent absorbed or attached thereto, where the nano-structure is selected from
8 the group consisting of a nano-shell, a plurality of nano-rods and a nano-shell having a plurality of
9 nano-rods disposed on a surface of the nano-shell, where the nano-particle core comprises a first
10 material, the nano-shell comprises a second conductive material, and the nano-rods comprise a third
11 conductive material, where the second and third conductive materials are the same or different.